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10/733,897	12/10/2003	Mike Mattlage		4621
7590		08/21/2007		
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			EXAMINER	
			ARK, DARREN W	
			ART UNIT	PAPER NUMBER
			3643	
			MAIL DATE	DELIVERY MODE
			08/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/733,897

Applicant(s)

MATTLAGE ET AL.

Examiner

Darren W. Ark

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4 and 7-9 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4, 7 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claim 9 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 3/20/2007.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 4, 7, 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Furuta 4,953,321.

Furuta discloses a fishing hook having an outer surface essentially of titanium or an alloy of titanium (single film layer or multiple film layers of titanium carbide, titanium nitride, Ti(C,N)) and an inner layer of stainless steel (base member 11), wherein said outer surface is deposited onto the inner layer (using chemical vapor deposition; for a product by process claim, the prior art structure merely has to be equivalent to those of

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the desired invention, the method of forming the desired invention is not given weight in the apparatus claim where the prior art device meets the structural limitations recited).

In regard to claims 7 and 8, Furuta discloses the surface layer comprising TiN, wherein the titanium alloy has a richer portion of titanium at the inner surface than at the outer surface and the outer surface layer is richer in nitrogen than the inner surface layer (since titanium alloy is deposited onto the hook surface, titanium concentration at that inner surface increases while free floating nitrogen remains in the atmosphere therefore providing higher nitrogen concentration at the outer surface).

4. Claims 4, 7, 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Furuta 4,928,423.

Furuta discloses a fishing hook having an outer surface essentially of titanium or an alloy of titanium (single film layer or multiple film layers of titanium carbide, titanium nitride, Ti(C,N)) and an inner layer of stainless steel (base member 11).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuta 4,953,321 in view of Bergman et al. 4,448,799.

Alternatively, Furuta discloses the surface layer comprises of a titanium alloy (TiN), but does not disclose the titanium alloy having a richer portion of titanium at the inner surface than at the outer surface. Bergman et al. discloses a physical vapor deposition process for coating titanium on a substrate using reactive gases to assist in the deposition. Examiner takes the position that it is inherent that the Bergman et al. discloses that the substrate (22) has a richer portion of titanium at the inner surface than at the outer surface due to the course of reaction of the titanium cathode (15), wherein as the deposition process proceeds the cathode (15) will decrease in size and thus have less surface area from which the titanium can occur in the vapor state. In other words, as the surface area of the cathode becomes smaller as time goes by, the area available for reaction is reduced and therefore the amount of titanium that can reach the vapor state is not as high as during an earlier time wherein the cathode has a larger surface area to provide more titanium (basically the quantity of nitrogen remains the same during the entire process while in comparison the amount of titanium is decreasing since it is being deposited on the substrate). It would have been obvious to a person of ordinary skill in the art to modify the hook of Furuta such that the titanium alloy has a richer portion of titanium at the inner surface than at the outer surface in view of Bergman et al. in order to assuredly coat the surface closest to the hook with the strongest and most durable coating so as to provide wear resistance and corrosion resistance.

7. Claims 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuta 4,928,423 in view of Bergman et al. 4,448,799.

Alternatively, Furuta discloses the surface layer comprises of a titanium alloy (TiN), but does not disclose the titanium alloy having a richer portion of titanium at the inner surface than at the outer surface. Bergman et al. discloses a physical vapor deposition process for coating titanium on a substrate using reactive gases to assist in the deposition. Examiner takes the position that it is inherent that the Bergman et al. discloses that the substrate (22) has a richer portion of titanium at the inner surface than at the outer surface due to the course of reaction of the titanium cathode (15), wherein as the deposition process proceeds the cathode (15) will decrease in size and thus have less surface area from which the titanium can occur in the vapor state. In other words, as the surface area of the cathode becomes smaller as time goes by, the area available for reaction is reduced and therefore the amount of titanium that can reach the vapor state is not as high as during an earlier time wherein the cathode has a larger surface area to provide more titanium (basically the quantity of nitrogen remains the same during the entire process while in comparison the amount of titanium is decreasing since it is being deposited on the substrate). It would have been obvious to a person of ordinary skill in the art to modify the hook of Furuta such that the titanium alloy has a richer portion of titanium at the inner surface than at the outer surface in view of Bergman et al. in order to assuredly coat the surface closest to the hook with the strongest and most durable coating so as to provide wear resistance and corrosion resistance.

Response to Arguments

8. Applicant's arguments filed 07/02/2007 have been fully considered but they are not persuasive.

In regard to applicants' argument that "...Furuta patents disclose an end product (a fishing hook) formed by chemical vapor deposition, which Applicant believes not to be only a process limitation, but also a structural limitation...", the Examiner contends that method steps cannot be used to further distinguish apparatus claims from the prior art of record. Furthermore in product-by-process claims, when the reference teaches a product that appears to be the same as, or an obvious variant of, the product set forth in a product-by-process claim although produced by a different process. See In re Marosi, 710 F. 2d 799, 218 USPQ 289 (Fed. Cir. 1983) and In re Thorpe, 777 F.2d 695, 227 USPQ 964 (Fed. Cir. 1985). See also MPEP § 2113.

In regard to applicants' arguments that "...with regard to claims 7 and 8, Applicant respectfully disagrees with the rejection that Furuta discloses the surface layer comprises of a titanium alloy wherein the titanium alloy has a richer portion of titanium at the inner surface than at the outer surface..." and "...Furuta...in view of Bergman et al...does not disclose that the titanium percentage of the deposited layer be richer at the surface of the core material than at the surface of the fishing hook...", the Examiner contends that by virtue of the nature of chemical vapor deposition processes that the concentration of titanium is richer at the inner surface than the outer surface since the surface area of the titanium cathode available for reaction with the

nitrogen is reduced and thereby the concentration of titanium deposited upon the hook decreases as the process proceeds over time.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arnold 5,956,845 discloses method of repairing a turbine engine airfoil part using a high-density coating process, such as HVOF thermal spray, wherein products such as pen tips and fishing hooks may be treated in accordance with the present invention so as to benefit from long lasting durability.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darren W. Ark whose telephone number is (571) 272-6885. The examiner can normally be reached on M-F, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on (571) 272-6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Darren W. Ark
Primary Examiner
Art Unit 3643

DWA